



Delhi Public School, Howrah

FINAL EXAMINATION (2024 - 2025)

Class – IX

Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

SUBJECT: DATA SCIENCE (SUBJECT CODE 419)

THEORY EXAMINATION

Time Allowed:-2 Hours

F.M.-50

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of **21 questions** in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (5 + 16 =) 21 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
 - i. This section has 05 questions.
 - ii. Marks allotted are mentioned against each question/part.
 - iii. There is no negative marking.
 - iv. Do as per the instructions given.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
 - i. This section has 16 questions.
 - ii. A candidate has to do 10 questions.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.

SECTION A: OBJECTIVE TYPE QUESTIONS

Q. 1	Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)	
i.	Which of the following component of the communication cycle should one refer in order to give a message a form suitable for communication? (a) Idea (b) Communication Channel (c) Message (d) Encoding	(1)
ii.	Giving all the needed information represents the component named _____ of the 7C's of effective communication. (a) completeness (b) conciseness (c) correctness (d) clarity	(1)
iii.	_____ depicts the built-in capabilities of certain thoughts, feelings & behaviors. (a) Belief (b) Weakness (c) Strength (d) Interest	(1)
iv.	Which of the following apps is a type of productivity app? (a) FAU-G (b) Google Calendar (c) Skype (d) QR code reader	(1)
v.	_____ is a type of business where an enterprise composed of a professional or team of experts that deliver work of aid in completing a task for the benefit of the customers. (a) Product (b) Service (c) Hybrid (d) Semi-Hybrid	(1)
vi.	_____ resources are those resources that are replenished by nature on their own after consumption. (a) Renewable (b) Non-renewable (c) Exhaustible (d) Nuclear	(1)

Q. 2 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)		
i.	State whether the following statement is True or False. Rewrite the correct statement if False. Data loss is the intentional or unintentional destruction of information, caused by people and/or processes.	(1)
ii.	Under which stage of the DIKW model 'Wh' questions like 'Who', 'What' and 'When' could be answered? (a) Data (b) Information (c) Knowledge (d) Wisdom	(1)
iii.	Frequency is one of the several ways of conducting _____ analysis. (a) Univariate (b) Bivariate (c) Trivariate (d) Multivariate	(1)
iv.	_____ plots are designed to display the relationship between the variables more than two. (a) Univariate (b) Bivariate (c) Trivariate (d) Multivariate	(1)
v.	The bell shaped histogram is also known as _____ distribution. (a) right skewed (b) uniform (c) bimodal (d) normal	(1)
vi.	The task of collecting and interpreting _____ data is time consuming. (a) quantitative (b) qualitative (c) numeric (d) discrete	(1)

Q. 3 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)		
i.	Data governance facilitates - (a) Reduction of cost (b) Ensure compliance (c) Minimizing of risk (d) All of these	(1)
ii.	What is the full form of D3 in D3.js software tool for data visualization? (a) Disk Driven Drive (b) Data Driven Documents (c) Data Drone Documents (d) Data Disk Drive	(1)
iii.	Which of the following is not a part of data processing? (a) Data Collection (b) Data Analysis (c) Communication Building (d) Data Interpretation	(1)
iv.	Which of the following category of variable belong to the data that has no hierarchy? (a) Nominal (b) Ordinal (c) Discrete (d) Continuous	(1)
v.	Answer in one word: Which kind of data footprint would be created when a user doesn't know that his/her activities are being monitored by a company on the internet?	(1)
vi.	State whether the following statement is True or False. Rewrite the correct statement if False. There is sufficient involvement of government in data collection process.	(1)

Q. 4 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)		
i.	_____ is a free data visualization tool that allows us for easy data visualization. It has a huge repository of maps, graphs and charts. (a) Fusion Charts (b) Tableau Public (c) Google Data Studio (d) Datawrapper	(1)
ii.	Quantitative variable, also known as _____ variable is a type variable that hold data value in the form of counts. (a) Accountable (b) Countable (c) Categorical (d) Numeric	(1)
iii.	Pie chart is a _____. (a) one-dimensional graph (b) two-dimensional graph (c) multi-dimensional graph (d) dimension-less graph	(1)
iv.	_____ refers to the inconsistencies and uncertainty in data as data collected by organizations and companies may be inconsistent or inaccurate through which they are not able to get meaningful or valuable insights. (a) Volume (b) Variety (c) Velocity (d) Veracity	(1)

v.	_____ plots are designed to reveal the relationship among several variables simultaneously. (a) Single variable (b) Multi variable (c) Bi-variable (d) All of these	(1)
vi.	Which of the following frequency distribution do not have any apparent pattern? (a) Uniform (b) Random (c) Right Skewed (d) Normal	(1)

Q. 5	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	Data governance help obtain which of the following? (a) Cleaner data (b) Accurate data (c) Concise data (d) All of these	(1)
ii.	A _____ graph is a graph where data are visualized in the form of dots or data points being the points connected with a straight line. (a) Line (b) dot (c) scatter (d) Area	(1)
iii.	Which of the following shapes commonly occur in a distribution where two peaks are observed rather than one clear centre? (a) Symmetric curve (b) Bell shape (c) Bimodal shape (d) Right skewed shape	(1)
iv.	Which of the following symbols is used to create functions manually in LibreOffice Calc? (a) = = (b) + (c) = (d) ++	(1)
v.	Which of the following is an unethical practice related to data? (a) Sharing private information anywhere (b) Never share private information online on untrusted sites (c) Both (a) and (b) (d) Neither (a) nor (b)	(1)
vi.	_____ is considered as a protective mechanism to discourage the mishandling and unethical use of data. (a) Data breaching (b) Information handling (c) Data Exploration (d) Data ethics	(1)

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks)

Answer each question in 20 – 30 words.

Q. 6	State the main difference between non-verbal communication and visual communication.	(2)
Q. 7	Ports are a number of holes and slots, into which you plug in computer devices like keyboard, mouse, etc. Ports are usually installed typically at the back or the sides of a desktop or a laptop. Name and state the function of any two ports in a computer.	(2)
Q. 8	State two main differences between Business and Entrepreneurship.	(2)
Q. 9	State any four qualities of an Entrepreneur.	(2)
Q.10	Bhavesh is given a responsibility to prepare a poster on Environment Conservation where he has to focus on the key reasons that affect nature and is liable to degrade it. State any four factors to Bhavesh that causes imbalance in the environment and can affect nature immensely.	(2)

Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)

Q.11	Big data analysis is widely used by organizations like banking and financial institutions as it is said that it may grow and increase their value in the competitive market. Explain.	(2)
Q.12	Online activities leave data footprints which may be good or bad. Thus, we should always try to protect ourselves from creating data footprints. State four protective measures from creating data footprints.	(2)
Q.13	Discuss four benefits of data visualization.	(2)
Q.14	Data visualization tools are software applications which are capable of displaying information in visual formats such as a graph, chart or map. Discuss Fusion charts and Tableau Public in this regard.	(2)
Q.15	What do you mean by the term "Histogram"?	(2)
Q.16	Gurpreet was scrolling through YouTube shorts as he was going through a last minute study before an interview he was scheduled to appear. He came across some shorts that shown a few scams	(2)

that took place within data handling organizations. He felt that how essential it is to implement ethical guidelines across various organizations. State four objectives of the ethical guidelines related to data science.

Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)

Q.17	Data interpretation is said to be the process of reviewing data through some predefined processes. It helps to assign some meaning to the data at arrive at a relevant conclusion. There are certain ways to interpret data. State the four main characteristics to interpret data.	(4)																
Q.18	<p>Jayesh is a student of Data Science in his school. He is given a portfolio activity to complete the following chart. Observe the given chart and fill in the blank boxes by stating the appropriate name, definition (in short) and example of the types of variable as applicable.</p> <div data-bbox="325 510 1278 831" data-label="Diagram"> <pre> graph TD A[Types Of Data] --> B[Qualitative Data] A --> C[Quantitative Data] B --> D[Name: Definition Example] B --> E[Name: Definition Example] C --> F[Name: Definition Example] C --> G[Name: Definition Example] </pre> </div>	(4)																
Q.19	Electronic data may be easily lost, damaged, infected, corrupted or misplaced, and recovering lost data means losing time and money to restore the information. There can be several reasons due to which data is prone get destroyed or lost. Discuss four major causes of data loss.	(4)																
Q.20	<p>Given below is a histogram that has been given to Gourav, working as a data analyst, which demonstrates percentage of computer ownership in their corresponding number of states. Identify the type of histogram. Gourav needs to analyze the data and interpret the graph to its equivalent spreadsheet data set. Help Gourav by constructing the equivalent data set in a tabular form in terms of the range of the percentage of computer ownership and their equivalent frequency.</p> <div data-bbox="483 1193 1123 1563" data-label="Figure"> <table border="1"> <caption>Data for Q.20 Histogram</caption> <thead> <tr> <th>Computer ownership range (%)</th> <th>Frequency (number of states)</th> </tr> </thead> <tbody> <tr> <td>35-40</td> <td>2</td> </tr> <tr> <td>40-45</td> <td>5</td> </tr> <tr> <td>45-50</td> <td>15</td> </tr> <tr> <td>50-55</td> <td>17</td> </tr> <tr> <td>55-60</td> <td>5</td> </tr> <tr> <td>60-65</td> <td>6</td> </tr> <tr> <td>65-70</td> <td>1</td> </tr> </tbody> </table> </div>	Computer ownership range (%)	Frequency (number of states)	35-40	2	40-45	5	45-50	15	50-55	17	55-60	5	60-65	6	65-70	1	(4)
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Q.21	The goals and needs of data governance are very much different from each other. There are some major goals of data governance that need proper execution in order to safeguard the data. State and explain the need for implicating data governance in an organization.	(4)																